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Dynamic Jamming Around a Cylinder Moving Through a Shear Thickening Suspension OLAV RMCKE, NTNU, Department of Energy- and Process Engineering, IVO R. PETERS, University of Southampton, Faculty of Engineering and Physical Sciences, R. JASON HEARST, NTNU, Department of Energy- and Process Engineering — Dense suspensions exhibit a rich set of behavior, such as shear banding, rheochaos, continuous and discontinuous shear thickening, and in some extreme cases even jamming. Dynamic jamming by shear, which is the focus here, is caused by the formation of a frictional contact network between grains as stress increases. Previous works have shown, in separate experiments, that a transient jammed region can develop under pulling, pushing and shearing. How these different scenarios interact when they appear in a single system, however, is unknown. By dragging a cylinder through a suspension of cornstarch and water, we are able to track the shape of the jammed region as it propagates through the suspension using PIV on the free surface. This work makes it possible to directly compare the propagation of the jammed region, in a system where pulling, pushing and shearing coexist.

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